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INTRODUCTION

Fred C. Hart Associates, Inc. (HART) has been retained by National Gypsum Company of Dallas, Texas and is currently engaged in a Remedial Investigation (RI) in and around Millington, NJ. This investigation has been implemented pursuant to CERCLA Administrative Order - 50103 between National Gypsum Company and the United States Environmental Protection Agency (USEPA) under the National Superfund Program.

As part of the Remedial Investigation, a groundwater monitoring network was installed at a site (designated Site A, Figure 1) within the Great Swamp National Wildlife Refuge. Prior to the installation of this monitoring network, a metal detection survey was conducted by HART personnel during preliminary subsurface site characterization. Findings of this preliminary survey, (Figure 2), indicate that there are a number of locations concentrated within this area with underlying metal objects.

At this point, the nature of these objects has not been determined. Discussions with refuge personnel have revealed that drums may be present on the site. The existence of rusted drums located on the surface in the vicinity of the site also points to the possibility of drummed waste at this location. Prior to the finalization of the RI report, full site characterizations are required in order to develop accurate endangerment assessments and feasibility studies.

Based on these findings, HART proposes to investigate further the subsurface of Site A within the Great Swamp National Wildlife Refuge prior to the submittal of the RI report. Details of this task are described below.

Purpose

The purpose of this investigation is to characterize further the subsurface conditions at Site A within the Great Swamp National Wildlife Refuge. Specifically, the investigation will focus on the presence of

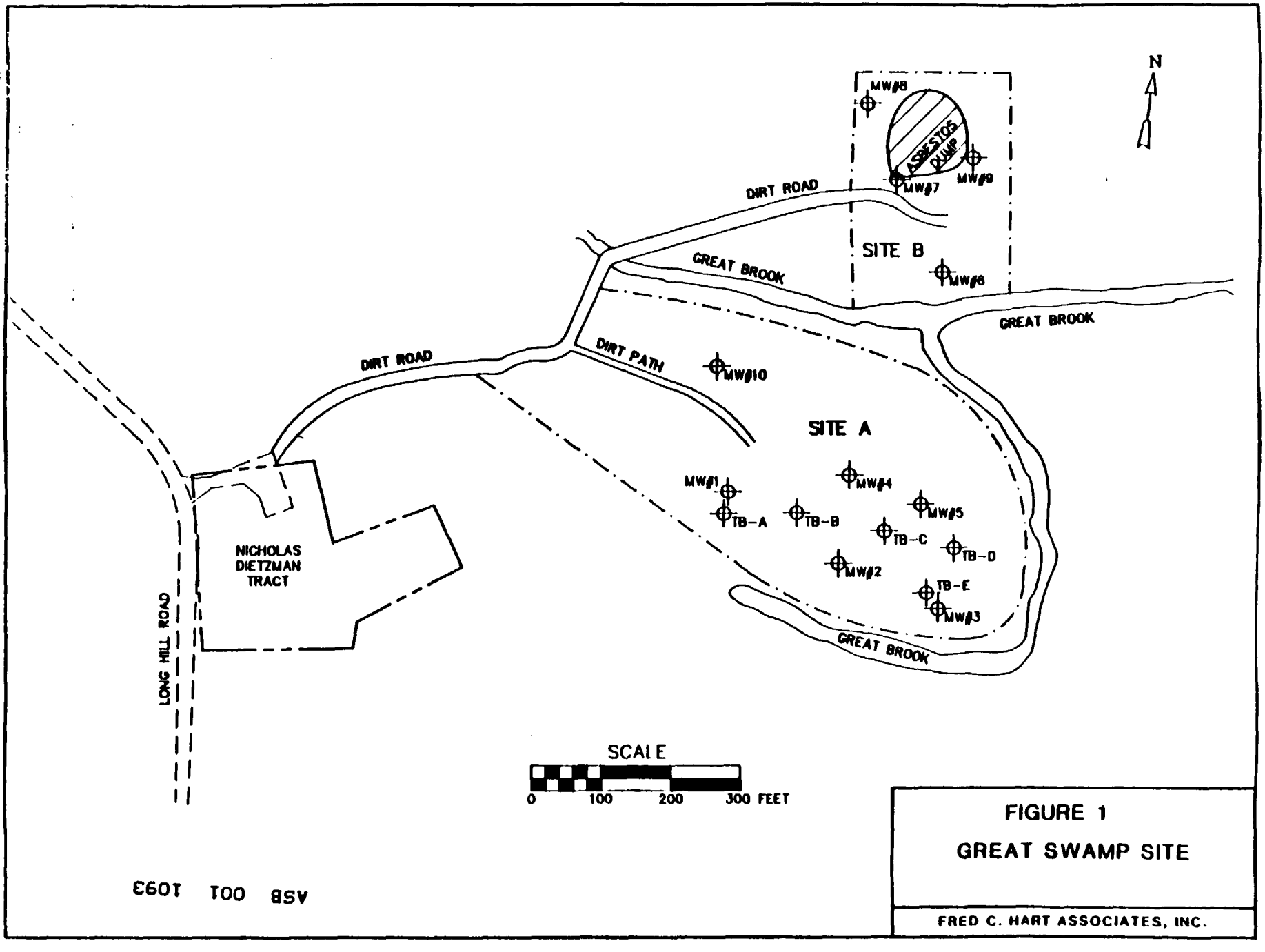
N
MW#8
ASBESTOS DUMP
MW#7
MW#9
DIRT ROAD
SITE B
GREAT BROOK
MW#6
GREAT BROOK
DIRT ROAD
DIRT PATH
MW#10
SITE A
MW#1
MW#4
TB-A
TB-B
MW#5
TB-C
TB-D
MW#2
TB-E
MW#3
GREAT BROOK
NICHOLAS DIETZMAN TRACT
LONG HILL ROAD
SCALE
0
100
200
300 FEET
FIGURE 1
GREAT SWAMP SITE
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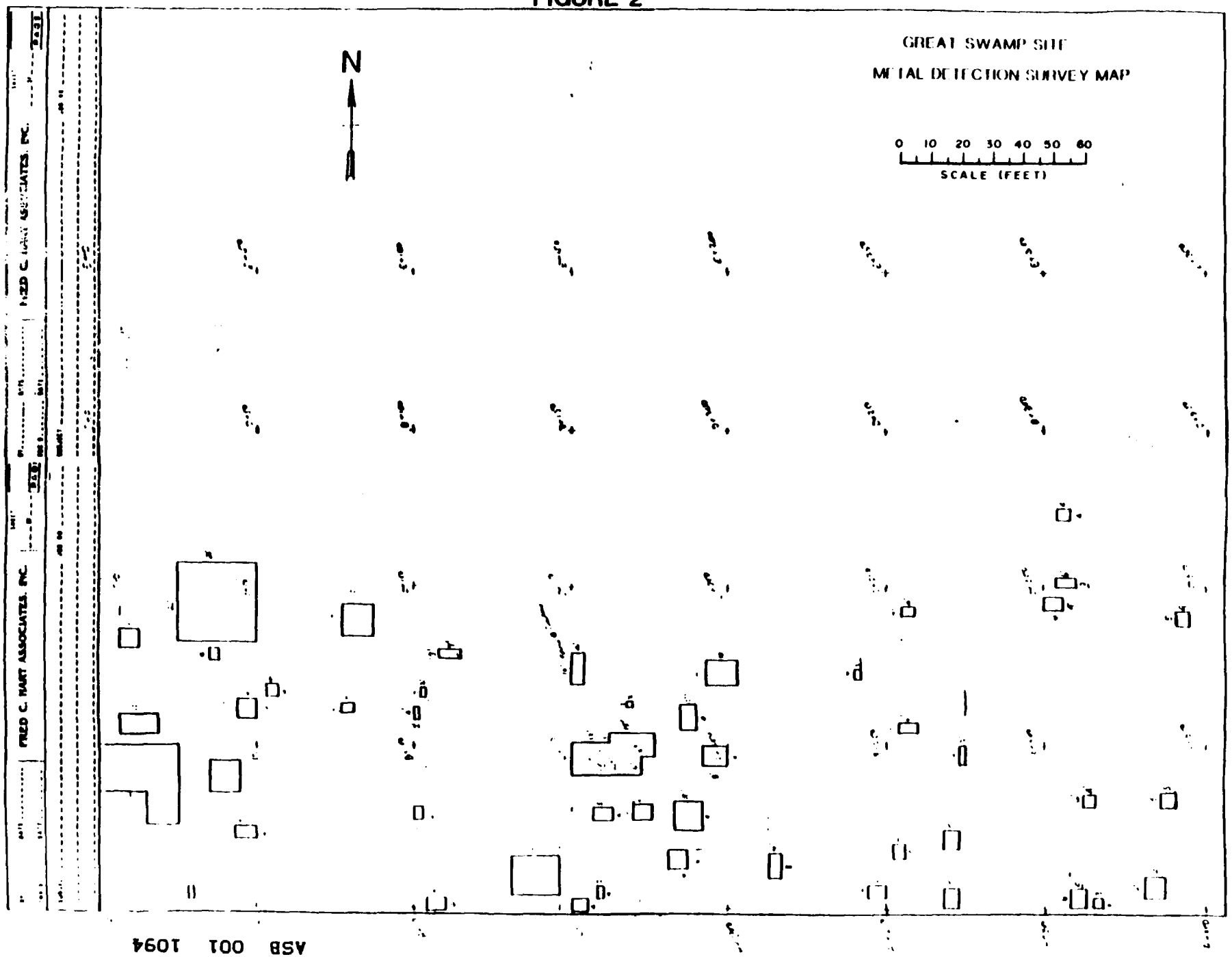
FIGURE 2


GREAT SWAMP SITE
METAL DETECTION SURVEY MAP
N
0 10 20 30 40 50 60
SCALE (FEET)
FRED C. HART ASSOCIATES, INC.
ASB 001 1094

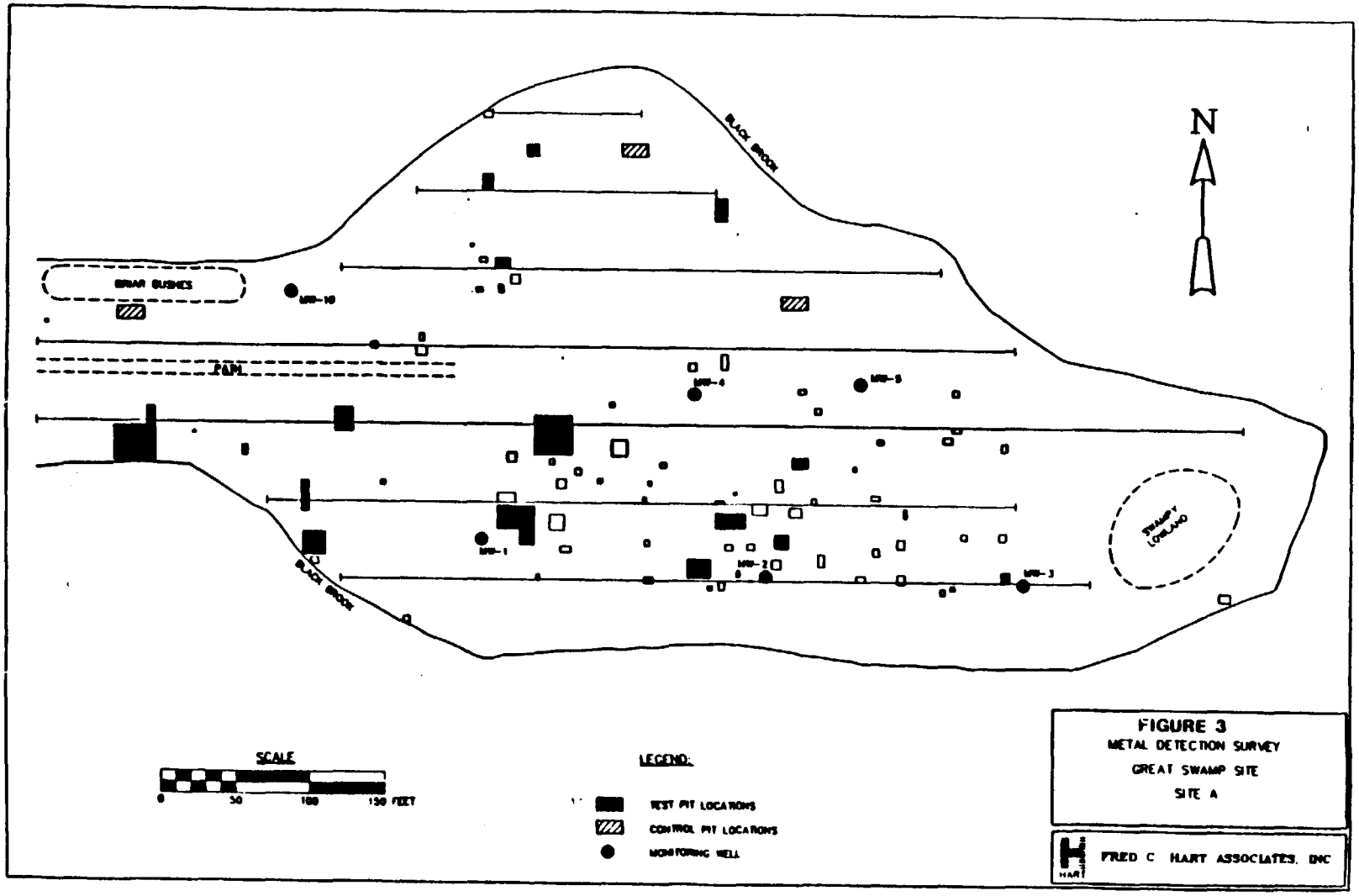
buried drums and a representative characterization of their waste materials. Also, data collected during this task will be evaluated and employed during the endangerment assessment and feasibility study.

Procedure

The first phase of this study will consist of surveying the entire area within Site A with a metal detector in an effort to locate prospective drum locations. This task will be accomplished by first constructing a surveying grid based upon 50 feet centers. A Pollard Model TW-5 metal detector will be employed to locate the metal. Data collected during the metal detection survey will be plotted on a base map and utilized to select test pit locations. Grid construction and metal detection surveying will be performed by HART personnel.

Following the completion of the metal detection survey, HART will meet with representatives of the U.S. Environmental Protection Agency (USEPA) and New Jersey Department of Environmental Protection (NJDEP) to determine the actual test pit locations. Control pits may be constructed in locations where metal was not detected, at the discretion of the HART on-site coordinator and EPA representatives. Anticipated test pits and control pits are provided in Figure 3. Test pits will be constructed using a rubber tire backhoe with bucket teeth removed. All test pits will be logged by a HART field geologist who will keep a complete description of materials encountered and observations in the field test pit log.

In the event that buried drums are located, HART and its subcontractor (HAZTECH) in coordination with representatives of the USEPA and NJDEP, will determine which drums are of suitable integrity to be removed and sampled. Drums will be recovered with a backhoe which will be equipped with an enclosed, explosion-proof cab and a separate air supply source. The excavation and drum sampling will be performed in Level B protection. The equipment operator will be careful when digging for drums to keep from puncturing a drum unexpectedly. Upon discovery of a drum, the operator will isolate the drum in order for HAZTEC personnel to attach a drum sling around the drum. If this is not possible or safety conscious, then


N
BLACK BROOK
BRIAR BUSHES
MW-10
P&M
MW-4
MW-5
MW-1
MW-2
MW-3
SWAMP / LOWLAND
BLACK BROOK
SCALE
0
50
100
150 FEET
LEGEND:
TEST PIT LOCATIONS
CONTROL PIT LOCATIONS
MONITORING WELL
FIGURE 3
METAL DETECTION SURVEY
GREAT SWAMP SITE
SITE A
FRED C HART ASSOCIATES, INC

HAZTECH technicians will carefully dig around the drums with hand tools in order to attach a drum sling to remove the drum from the excavated area.

After removing the drum from the test pit, it will be sampled with a clean drum thief. A drum thief is a hollow glass tube that is inserted into the drum through the bung and allowed to fill with the drummed content. The drum thief is then removed and used to fill laboratory supplied glassware. If a drum should have to be punctured, a ground wire will be attached to the drum to prevent static electricity and a punch attachment on the backhoe will be utilized. Sampling will be documented with a complete sampling log. Pictures of every excavated drum will also be taken.

Immediately following the sampling, each drum will be overpacked, labeled and placed in the staging area which will be bermed and lined with a heavy 20 mil liner to contain any discharge in the event of contaminant release. In addition, the staging area will be surrounded by a six-foot fence outside the berms to protect the drums from vandalism and curious wildlife. The fence and drums will be well-labeled to inform the public about the staging area.

The test pits will be backfilled with on-site fill following their completion. Additional clean fill will also be available to backfill those test pits from which buried drums are removed. These test pits will be filled with clean fill at the bottom and then covered with the removed asbestos fill material.

When all sampling and staging activity is completed, all contaminated equipment will be decontaminated with Alconox detergent and water at the decontamination area within Site A (Figure 4). Final decontamination will occur at the decontamination area in the parking lot (Figure 4). All decontamination water will be drummed and sampled to determine proper disposal methods. Care will be taken to minimize decontamination water to reduce future disposal. Upon tearing down the site, special attention will be taken to thoroughly police for materials and trash due to the sensitivity of the site.

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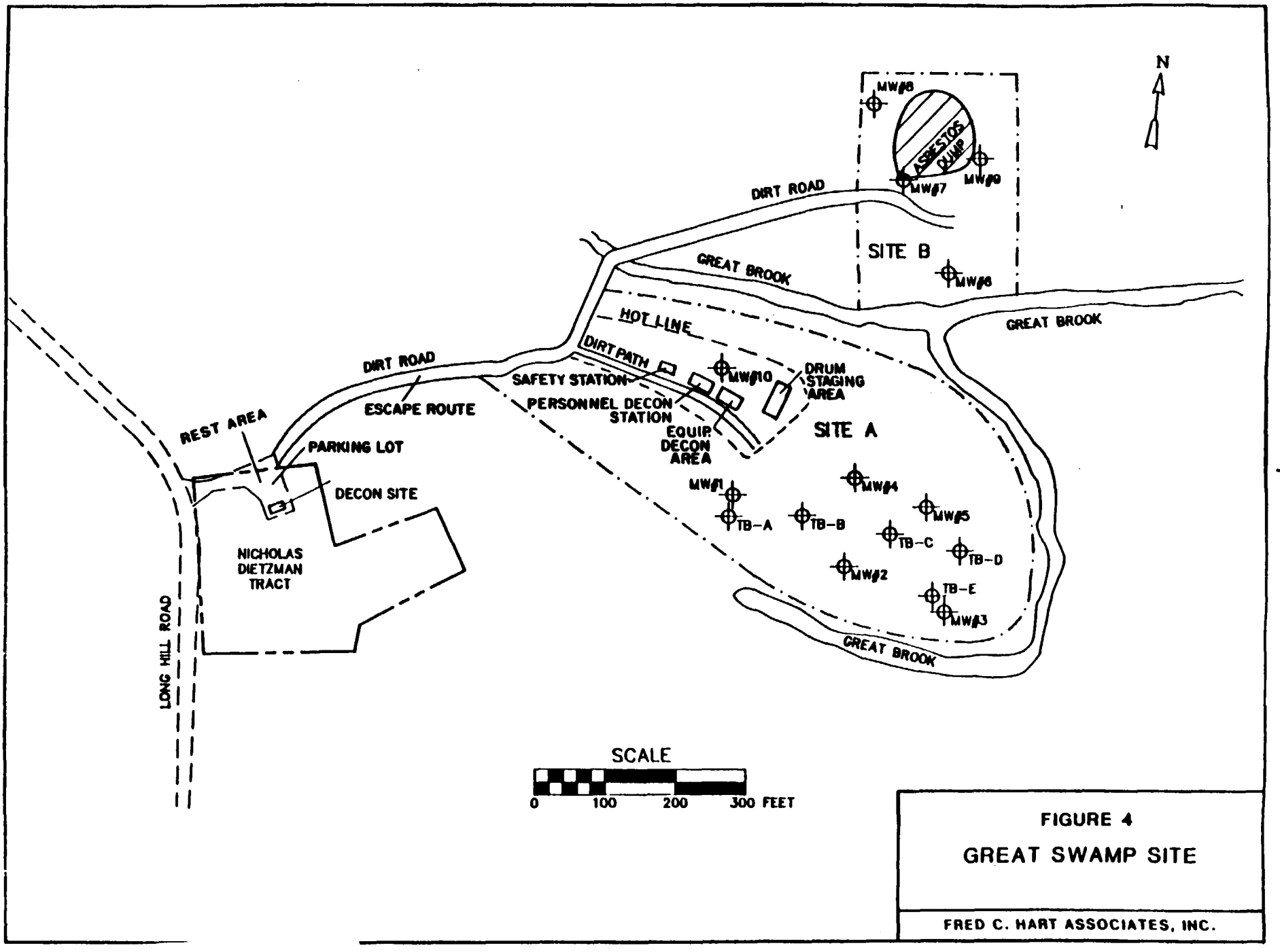

FIGURE 4

GREAT SWAMP SITE

FRED C. HART ASSOCIATES, INC.

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The samples will be properly labeled and packed and sent to Wadsworth Alert Laboratory in Canton, Ohio for analysis. All drum samples will be analyzed for the parameters listed in Table 1. Following the receipt of laboratory analyses, HART will provide a disposal plan to USEPA for approval.

Test pit construction, drum removal, sampling, and disposal will be performed by HAZTEC of Bordentown, New Jersey. Health and safety procedures are provided in Attachment 1. All field work will be conducted in Level B protection. An HNu, explosimeter, and an oxygen meter will be employed during the field effort as part of the health and safety procedures. These instruments will be utilized by technicians stationed in the immediate vicinity of the test pits. Specifically, the HNu will be utilized at the exclusion zone perimeter (an area of 50 foot radius from the test pits), during drum sampling, and in the breathing zone at the test pits. The explosimeter and oxygen meter will be used during test pit excavation.

A hotline will also be established at Site A to ensure safety of all personnel. Once personnel cross the hotline, they will undergo full decontamination in the personnel decontamination area. This decontamination procedure will consist of an alconox detergent and water rinse followed by a water wash of all gloves, boots and outer protective clothing. All disposal protective clothing will be drummed for proper disposal.

TABLE 1

Waste Characterization
- Total Cyanide and Sulfides
- Flashpoint
- Compatibility
- Ignitability
- EP Toxicity

Priority Metals
- 13 metals
- HEX chrome

Phenols

Priority Pollutants - Peaks
- Pesticides
- Volatile Organics
- Acids
- Base Neutrals
- PCBs
- EPA Method - 624, 625 - Liquids

- Includes tentative ID of compounds and concentrations

Note: For solid materials - EPA method SW846 which is a preface for 8240, 8270 and 8080 will be used.

ATTACHMENT 1

SITE SPECIFIC HEALTH AND SAFETY PLAN

Site Name: Great Swamp Site Site Address: Morris County, NJ

Project Name: Fred C. Hart/Great Swamp Site Phone: NA

Project #: 2322-87-0610

Project Mgr/Operations Mgr: Paul Williams

Supervisor: Dan Clingan Off Site Phone # (609)298-8705

Site Health & Safety Officer: Dan Clingan Foreman: Steve Holt

Haztech Personnel: _____

Plans prepared by: Dan Clingan Date: 1/27/87
Position/Title: Supervisor Signature (if available) _____

Plans reviewed by: Sonya Manejkowski Date: 1/27/87
Position/Title: Corp. Occupational Hygienist
Signature (if available) _____

Amendments prepared by: _____ Date: _____
Position/Title: _____

SUMMARY OF ACTIVITIES/OBJECTIVES

Directions: In short blanks put in check, if appropriate. In long blanks, write in information.

I. Site description: Spill ___ HW Site X Site: possible drum site landfill

Features: Tanks ___ drums X other containiners Asbestos
buildings ___ dikes ___ power lines ___ sumps X bodies of water X
dips in the land X other _____

Site map should indicate: Exclusion zone, hotline demarkation, decontamination zone, support area, escape routes, entrances, work areas, upwind direction, 1st aid area, rest area, features. Attach map if possible or sketch below.

Site Map is provided on the following page.

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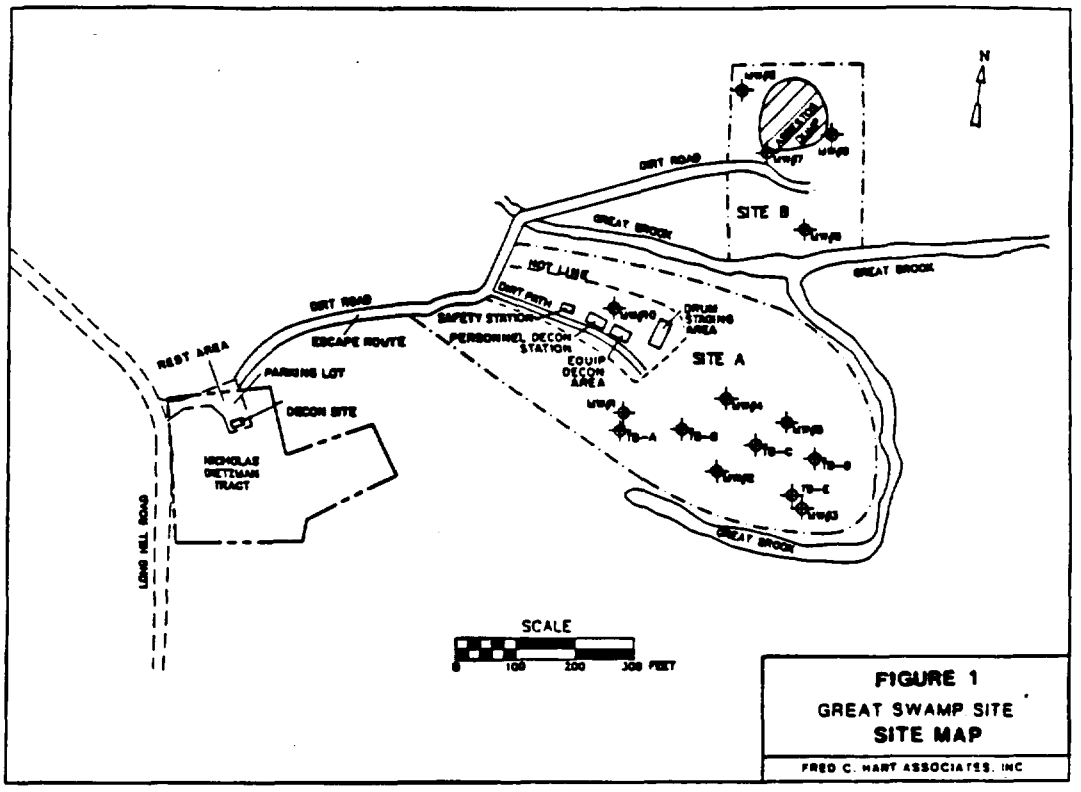

FIGURE 1
GREAT SWAMP SITE
SITE MAP
FRED C. HART ASSOCIATES, INC

Note:

The exclusion zone will be designated as the area extending in a 50 foot radius from the test pits.

The entrance and escape routes will be along the dirt road.

The work areas are scattered throughout Site A.

The first aid area will be in the saftey station.

II. Work Plans:

1. Spill clean up: ___ Remedial Cleanup X Asbestos _____ Other _____
2. Soil: excavation X Treatment _____ Disposal ____ Other _____
3. Drum: excavation X Sampling X Staging X Disposal X Other ____
   Treatment _____ Disposal _____ Other _____
4. Well installation: NA 5. Water Treatment NA
5. Building Decontamination NA Demolition NA
7. Other: _____

III. Physical Hazards: Heat ____ Cold X Radiation _____

Turbulent weather _____ heavy equipment noise _____

Probability of fire/presence of flammables: minimal Other: _____
Please list known substances & write in information for each one and note which reference (106 or some other) was used. The hygienists can assist.

Much of the information for the following can be found in:

1. ACGIH's TLV'S Threshold Limit Values and Biological 1986-87
2. ACGIH's Guidelines for the Selection of Chemical Protective Clothing
3. NIOSH's Pocket Guide to Chemical Hazards
4. NIOSH's Analytical Methods & Sampling
5. SAX's Dangerous Properties of Industrial Materials
6. SITTIG's Handbook of Toxic & Hazardous Chemicals & Carcinogens

IV. Substance	Liquid	Sludge	Solid	Vapor/Gas	Attached to Particulate
Methylene Chloride	-	-	-	X	X
Trichloro-fluoromethane	-			X	X
Chloroform	-			X	X
Benzene	-			X	X
Toluene	-			X	X
DDT			-	X	X
Diethyl Phthalate				X	X

Substance	Symptoms	Skin Absorber	Skin Irrit
Methylene Chloride	INH -ftg, weak sleep lt head ING -limbs, numb, tingle, nav CON -irrit eyes, skin, vertigo, worsen angina	-	X
Trichloro-fluoromethane	INH -inco, tremors, derm ING -frostbite, card arrhy, card CON -arrest	-	X
Chloroform	INH -dizz mental dullness ING -nav head ftg anes CON -hepatomegaly eye skin irr (carc)	-	X
Benzene	INH -irrit eyes, nose, resp sys ABS -giddy, head, nau, stag-gered gait ftg abnor. CON -lass, derm, bone marrow depres, abddm pain, carc	X	X
Toluene	See Benzene	-	X
DDT	INH -pares tongue, lip, face ABS -tremor appre, dizz, conf ING -mal head convuls CON -paresis hands, vomit, irit eyes, skin, carc.	-	X
Diethyl Phthalate	irritant mucous membranes, eye hi conc. - narcotic	-	X

Substance	Flammable	Explosive	Shock Sensitive	Flashpoint	LE
Methylene Chloride	-	-	-	12°F	
Trichloro fluoromethane	-	-	-	X	
Cnloroform	-	-	-	X	
Benzene	X	-	-		1.3
Toluene	X	-	-		1.3
DDT	-	-	-	-	
Diethyl Phthalate	not available			325°F	

Substance	PEL/ TLV	Skin Notation	(In TLV Book)	IDLH	Odor Threshold
Methylene Chloride	(100)	X		5000ppm	4096 ppm
Trichloro-fluromethane	C1000	NA		10000ppm	NA
Chloroform	10	-		1000ppm	NA
Benzene	10	-		2000ppm	30 ppm
Toluene	100	-		2000ppm	300-400 ppm
DDT	-			CA	NA
Diethyl Phthalate	5mg/m^3			not avail	not avail

V. Air Monitoring

Air Monitoring Equipment Need:

HNu _X_ OVA _____ O_2 meter _X_ Explosimeter _X_ Pumps ___ Sample Media__

Detector tube types (especially useful for inorganics)_____ other_____

*** Be sure to calibrate and to attach log with air monitoring data. Send this info to COH in Atlanta at jobs end.

Air Monitoring Plans(where, who, when, with what instruments, etc).

HNu instrument will be used at job perimeter and breathing zone at test pi everyday or as necessary. 02 + explosimeter each test pit and when necessary.

Initial Monitoring Results:

Substance	Quantity	Equipment used	Total Organic Vapors (from HNu,OVA)

Please fill in the blanks. Hygienists will be happy to assist.

Air Monitoring Consequences:

Concentration of Contaminant	Level of Protection	Specific Information
0 ppm to 10 ppm	Level D	Coveralls tyvek Safety glasses/goggles yes if splash Kind of glove cotton Safety boot steel toe Kind of protective footwear Other hardhat
10ppm to 100ppm	Level C	Full face resp. cartridge organic & hepa Kind of protective clothing tyvek Hood tyvek Kind of inside glove vinyl Kind of outside glove PVC Chemically resistant safety boot Kind of protective footwear neoprene rubber oute Other hard hat with spash gear
100pm to 500ppm	Level B	SCBA X SAR X Kind of protective clothing tyvek, chemical suit Hood tyvek Kind of outside glove PVC Kind of protective footwear rubber Other
500pm to X ppm	level A	SCBA NA Encapsulating Suit NA Plus items listed in Level B NA Other NA

Hard hats must be worn for all excavation activities.
Switch to SCBA's when levels are IDLH, O_2 is 19.5% or less.
Please remember the protection factor for full face cartridge respirator is 50; for SAR is 2,000, for SCBA is 10,000.

Multiply the protection factor x the TLV = maximum amount of contaminant in ppm allowed for that respirator.

For example: full face cartridge respirator X TLV Benzene

50 X 10ppm $\leq$ 500 ppm benzene ok with that respirator

VI. Special Medical Surveillance

Oral Temperatures (for heat or cold stresses) ___ Needed Equipment _____

Medical Tests
for which contaminants NA Source of Info NA pp#_____

Other _____

VII. Special Training or Review of Training
Heat Stress __ Cold Stress X Symptoms X Odor Threshold_____

Emergency procedures _____ Hand/Horn Signals Horn Other _____

VIII. Equipment Decontamination

Solution(s) detergent & water Needed Equipment brushes, bucket, decon catch basin

Decon Plan All personnel pass thru decon when exiting hot zone

Heavy Equipment Decon to be deconed when leaving site Other when necessary

IX. Other Equipment
Fire extinguisher: A X B X C X D ____
Fire Equipment _____

Emergency Equipment: Eyewash X Shower ___ Other:_____

1st Aid Equipment emergency oxygen, first aid kit

X. Injury/Medical Emergencies (General Priorities):

1. Use hand signals, horn signals
2. Avoid exposure.
3. Remove person from site unless spinal injury, is possible.
4. Avoid contamination of unprotected persons, if possible.
5. Eye contact - 15 minutes of eye wash solution or of plain water , contact doctor immediately.
6. Cursory decon is possible if injury does not involve broken bones, loss of consciousness or heat stress.
7. Remove or cut off clothing.
8. Skin contact - shower 15 minutes, contact doctor as chemical might have been absorbed.
9. If necessary, transport to hospital or call paramedics.

XI. Emergency Contacts - Post at Site, in many locations. Post map in vehicles likely to be used during an emergency.

Local Assistance:

1. Paramedics: Phone # 201-522-2232

2. Hospital: Phone # 201-522-2232 Travel Time _____

Name Overlook Hospital Address Summit, NJ

Map:

3. Fire Dept. Phone # 201-647-1800

4. Police Dept. Phone # 201-647-1800

5. Poison Center Phone # 201-522-2232

Other Assistance:

Occupational Medicine Associates (OMA) (404) 449-9014, 455-7008
After Hours (404) 529-9117

Haztech 404-981-9332
EPA 404-347-3043
Chemtrec (24 hrs) 800-424-9300
Bureau of Explosives (24 hrs) (202) 293-4048
National Response Center (NRC) 800-424-3802
Center for Disease Control (CDC) 404 329-3534
DOT, Office of Hazardous Operations (202) 426-0656
DOT regulations (202) 426-9280
US Coast Guard (major incidents) (202) 426-8802
National Agricultural Chemical Assoc.(513) 961-4300

HEALTH AND SAFETY EQUIPMENT LIST

SCBA's
Tyvek Suits' with hoods
Saranac Suits
PVC Gloves
Surgical Gloves
Disposable Booties
Full Faced Respirators
HEPA Organic Vapor Cartridges
Safety Goggles
Cascade Manifold System
Air Line Hoses
Portable Eye Wash
HNu Photoionizer Meter
Explosimeter
Oxygen Meter
Fire Extinquishers
Dedicated Drum Thiefs
Portable 2-Way Radios
First Aid Kit
Hard Hats
Face Shields
Emergency Oxygen Kit
Non-Sparking Tool Set
Fencing
Duct Tape
20 mil Liner Material
Overpack Drums
Sorbant Pads
Trash Bags
Clean Fill
Pick-up Truck
Box Truck

CONTINGENCY PLAN

The objective of the contingency plan is to minimize hazards to human health and the environment for fires, explosions or any uplanned releases of waste into the air, soil, or surface water that may occur during the field activities. In the event that a fire, spill or other emergency situation develops, the site safety officer will be the emergency coordinator responsible for coordinating all emergency response measures. This person has the authority to commit all resources necessary to carry out the contingency plan. The emergency coordinator will be Ms. Frances Barker. The alternate emergency coordinator will be Mr. Steve Hambos

7. Implementation of Contingency Plan

In case of an emergency situation, the emergency coordinator has full authority to make the decision concerning the implementation of the contingency plan. Depending on the degree of seriousness, the following potential emergencies might call for the implementation of the contingency plan at Site A of the Great Swamp Site.

Spills. Spills of contamination from recovered drums and drummed contaminated water from decontamination sites will be absorbed with an absorbent, such as Speedy-Dri, and contaminated absorbent and soil will be drummed. Contaminated materials will be properly disposed.

Spills of fuels, hydraulic oils or other petroleum products will be cleaned up using absorbent, shovels and rakes. The spilled material will be place din plastic bags, buckets and/or 55 gallon drums for transport and disposal. All fueling and maintenance of the equipment will be conducted at least 50 feet from rivers, steams, and ponds.

Flooding. If a flood should occur due to a heavy rainfall, the area will be evacuated immediately.

Release of Asbestos. During test pit excavation fibrous asbestos may be disturbed and become airborne. If this occurs, water will be used to wet the asbestos, thereby lowering the levels of asbestos in the air. As a contingency, mist applicators will be kept at the site during test pit excavations.

Fire/Explosion. This hazard is not expectant due to the nature of the materials anticipated to be encountered. But, as a contingency, fire extinguishers capable of handling chemical and electrical fires will be available onsite. In the event of fire or an explosion, all personnel will be evacuated and the local fire and police departments will be notified as well as staff members of the Great Swamp National Wildlife Refuge. Additionally, the local fire and police department will be notified of the commencement date of the test pit operations, so that they are adequately prepared for any emergency.

Emergency Response Procedures. In the event of a non-acute emergency, the procedures listed below will be followed.

1. Any employee discovering or causing a non-acute emergency situation must immediately contact the emergency coordinator.

2. The emergency coordinator will assess the situation and contact the appropriate personnel to respond to the emergency situation.

3. The emergency coordinator will take all necessary measures to contain the hazard and to prevent its spread to the environment and to adjacent homes.

4. Safety measures will be taken to ensure maximum protection of emergency personnel and will include the use of appropriate protection equipment.

5. All non-emergency personnel will be removed from the hazard area until the hazard has been contained and controlled.

6. Following containment and control of the emergency, the emergency coordinator will asses the situation to determine if all contaminated wastes generated by the emergency personnel have been collected and disposed on on-site.

7. The emergency coordinator will ensure that all emergency equipment is restored to full operational status by the emergency personnel.

8. The emergency coordinator will investigate the cause of the emergency and will take steps to prevent the recurrence of such an incident.

9. The emergency coordinator will notify Morris County or Passaic County Health Department.

10. If necessary, the emergency coordinator will submit a written report of the incident to the Administrator of EPA Region II.